

E. REMARKS/ARGUMENTS

1. Objections to Drawings

1) The drawings have been objected to, on the grounds that reference characters "131" in the specification [0053] and "331" in Fig. 3 have both been used to designate a knob, and that "129" and "329" have both been used to designate louvers.

In response, applicant has amended paragraph [0053] of the specification, to change "131" to "331", and to change "129" to "329".

Applicant submits that this objection has now been overcome.

2) The drawings have been objected to, on the grounds that they do not include the following reference characters mentioned in the description: 151 mentioned in [0082], and 425 mentioned in [0097].

Applicant submits that reference character "151" is indeed included in Figure 1, and is not missing. Please refer to the sensory generator in Figure 1, which is indicated using the reference character 151.

Regarding the reference character 425 mentioned in [0097], Applicant submits that in FIG. 4, the reference character 421 was inadvertently used by mistake, instead of 425, to indicate the second display screen wall. A corrected drawing sheet in compliance with 37 CFR 1.121(d) is being submitted herewith, for FIG. 4.

Applicant submits that this objection has now been overcome.

3) The drawings have been objected to, on the grounds that 421 was used to designate both window and door in paragraph [0097].

Applicant submits that, by submitting the corrected drawing referred to in section 2) above, and by the amending paragraph [0097] of the specification (see section B), 421 is no longer used twice in FIG. 4, and this objection has now been overcome.

4) The drawings have been objected to, on the grounds that they include a reference character, 147, that is not mentioned in the description.

A corrected drawing sheet in compliance with 37 CFR 1.121(d) is being submitted herewith, for FIG. 1, that does not include 147.

Applicant submits that this objection has now been overcome.

2. Objection to Claim 15

Claim 15 has been objected to because of an informality: it was inadvertently written as depending on itself.

Claim 15 has been amended, so as to depend on claim 1.

Applicant submits that the objection to claim 15 has now been overcome.

3. Rejection of Claims 30, 31, and 35 Under 35 U.S.C. § 102(b)

Claims 30, 31, and 35 have been rejected under 35 U.S.C. § 102(b) as being unpatentable over U.S. Pat. No. 6,278,418 to Doi ("Doi").

In response to the Examiner's rejections, Applicant has canceled claims 30, 31, and 35.

4. Rejection of Claims 32, 33, and 36 Under 35 U.S.C. § 102(b)

Claims 32, 33, and 36 stand rejected under 35 U.S.C. § 102(b) as being anticipated by US Pat. No. 5,310,794 to Ritchey. Applicant respectfully traverses.

In response to the Examiner's rejections, Applicant has amended independent claim 32 to include the limitation of claim 36, and has canceled claims 33 and 36.

In particular, Applicant has amended independent claim 32 to recite a sensor configured to sense an interaction between an individual and the environment created by the modular walls. This amendment adds no new matter, and is fully supported by the specification.

A prior art reference anticipates a claim only if the reference discloses all the elements and limitations of the claim. If even one element or limitation of the claim is missing, a §102 rejection fails. See e.g. Kalman v. Kimberly-Clark, 713 F.2d 760, 771, 218 U.S.P.Q. 781 (Fed. Cir. 1983).

Claim 32

Applicant respectfully submits that Ritchey does not anticipate the invention as recited in amended independent claim 32, because Ritchey does not teach or suggest at least the following limitations of claim 32:

- 1) “[A modular interactive environment including] . . . at least one sensor configured to sense an interaction between the individual and the environment created by the modular walls”; and
- 2) “[A modular interactive environment including] . . . a processing system in communication with the sensor and the display and configured to deliver images to the display that vary based on the interaction between the individual and the environment sensed by the at least one sensor.”

Ritchey relates to an image display system for panoramic viewing. Ritchey does not relate to delivery of images that vary based on an interaction between an individual in an environment, and the environment.

In particular, Ritchey relates to a panoramic image display system that displays substantially continuous panoramic scenes, by making portions of an image viewable to a viewer in every direction in which the viewer may turn, so that the viewer would perceive himself to be surrounded by a continuous panoramic scene. See e.g. Ritchey Col. 1, lines 6-10 (“*The present invention provides improved panoramic display systems for recording, distribution and display of panoramic scenes which encompass all directions viewable by a viewer.*”); Col. 9, lines 16-19

(" . . . the viewer is surrounded by display units such that the viewer sees a respective portion of the scene of spherical coverage in any viewable direction");

According to the disclosure in Ritchey, a composite image may be divided into a plurality of image segments, and displaying the segments of the composite image on respective individual display units. These display units may be mounted in all viewable directions in a closed structure, to recreate a panoramic view. Col. 9, lines 46-54 (*" . . . Image segments 13 represent portions of a camera recorded scene . . . Typically the segments represent adjacent portions of the surrounding panoramic scene. Each image segment 13 is displayed at a designated area within the display assembly 4 such that the recorded scene is re-formed in the same."*)

Regarding the above limitation 1) of claim 32, Ritchey does not teach or suggest a sensor that senses an interaction between an individual within an environment (created by a set of modular walls), and the environment.

The Examiner also does not state anywhere in the Office Action that Ritchey teaches or suggests such a sensor.

Regarding the above limitation 2) of claim 32, nowhere in Ritchey is there any teaching or suggestion of any processing system that is configured to deliver images to a display that vary based on the interaction between the individual and the environment (created by a set of modular walls) sensed by the sensor.

The Examiner also does not state anywhere in the Office Action that Ritchey teaches or suggests such a processing system.

Accordingly, Applicant submits that Ritchey fails to teach or suggest the above-mentioned limitations of amended claim 32, and therefore that amended claim 32 is not anticipated under 35 U.S.C. 102 (b).

Claims 33 and 36

Claims 33 and 36 have been canceled, and therefore the Examiner's rejection of claims 33 and 36 is now moot.

For the reasons set forth above, Applicant respectfully requests that the rejection of claim 32 under 35 U.S.C. 102(b) as being anticipated by Ritchey be withdrawn.

5. Rejection of Claims 1-20, 29, and 34 Under 35 U.S.C. § 103(a)

Claims 1-20, 29, and 34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over US Pat. No. 5,310,794 to Richey ("Richey") in view of U.S. Pat. No. 6,522,311 to Kadowaki et al. ("Kadowaki"). Applicant respectfully traverses.

In response to the Examiner's rejection, independent claim 1 has been amended to include the limitation of claim 34, and claim 34 has been cancelled.

Claim 1

Applicant submits that, for reasons discussed below, a *prima facie* case of obviousness of independent claim 1, as currently amended, has not been established and therefore that there is no proper basis for a 35 U.S.C. § 103 rejection of claims. See MPEP 2142 ("The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness... The initial burden is one the examiner to provide some suggestion of the desirability of doing what the inventor has done.")

In order to establish a *prima facie* case of obviousness, a §103 rejection (based on a single reference) must satisfy, *inter alia*, at least the following conditions (see MPEP 2142 and 2143):

- A) The prior art reference must teach or suggest all the claim limitations.

B) There must be some suggestion or motivation to combine the references on which the rejection is based.

Applicant submits that the Examiner's rejection of claim 1 (as currently amended) satisfies neither criterion A nor criterion B set forth above.

**A. The Cited Document (Ritchey) Fails to Teach or Suggest
All of the Limitations Of Amended Independent Claim 1**

Applicant respectfully submits that neither Ritchey nor Kadowaki, either alone or in combination, teaches or suggests the subject matter of amended independent claim 1. In particular, Applicant submits that at least the following elements of amended independent claim 1 (see section B above) cannot be found in either Ritchey or Kadowaki, either alone or in combination:

1) *"at least one real, three-dimensional object positioned within the structure, the real object and the structure cooperating to form a seamless and integrated scene;"*

2) *"at least one sensor configured to sense an interaction between the individual and the scene [formed by cooperation of the real object and the structure] while the individual is in the scene"*

3) *"a processing system . . . configured to deliver a sequence of images to the display, the content of which are a function of the interaction between the individual and the scene sensed by the sensor."*

Ritchey

As explained earlier, Ritchey does not relate to any of the limitations 1), 2) , and 3) above, but rather is directed to an image display system that displays panoramic scenes to a viewer, in such a way that the viewer can view substantially continuous panoramic scenes, whichever direction the viewer may turn.

Regarding limitation 1) above, the Examiner has acknowledged in the Office Action that Ritchey does not teach or suggest this limitation. See Office Action,

pages 7-8 (*"Richey teaches the claimed limitations of claims 1-20, 29, 34, with the exception of teaching placing at least one real, three-dimensional object within the structure."*)

Regarding limitation 2) above, Ritchey does not teach or suggest anywhere any sensor that senses an interaction between an individual and a scene, the scene being seamless and integrated, and formed by the cooperation of a structure (large enough to accommodate the individual both before and after the individual has taken some displacement steps within the structure) and at least one real 3D object positioned within the structure.

The Examiner also does not state anywhere in the Office Action that Ritchey teaches or suggests such a sensor.

Regarding limitation 3) above, nowhere in Ritchey is there any teaching or suggestion of any delivering of images whose contents are a function of the interaction (sensed by the sensor recited in limitation 2 above) between the individual and the scene, nor of any processing system configured to deliver a sequence of such images to the display.

The Examiner also does not state anywhere in the Office Action that Ritchey teaches or suggests a processing system that is configured to deliver a sequence of images to the display, the content of which are a function of the interaction between the individual and the scene sensed by the sensor.

For these reasons, Ritchey fails to teach or suggest at least limitations 1), 2), and 3) set forth above of claim 1.

The Examiner's discussions of Ritchey, on pages 8-9 of the Office Action, do not relate to the above limitations of rejected claim 1, and hence are irrelevant for purposes of analyzing these limitations of claim 1. For example, the Examiner

states on page 8, lines 21-23, that “. . . *the viewer's entire body is positioned in the large display assembly (23)(claim 1), in which the viewer is surrounded by display units such that the viewer sees a respective portion of the scene of spherical coverage in any viewable direction (claims 1, 2).*” However, nowhere in claim 1 (or 2) is there any limitation that recites surrounding a viewer by display units such that the viewer sees a respective portion of the scene of spherical coverage in any viewable direction. As another example, the Examiner states “*the panoramic scene consists of a plurality of image segments that form a composite image on a single view frame,*” referring to claim 1. Claim 1 does not recite, however, any panoramic scene that consists of a plurality of image segments that form a composite image on a single view frame.

Kadowaki

Kadowaki relates to an image information displaying system including a hologram screen. Kadowaki does not relate to any interactive environment that is partially real and partially simulated.

Regarding limitation 1) above, nowhere in Kadowaki is there any teaching or suggestion of any real, three-dimensional object positioned within a structure (large enough to accommodate an individual both before and after the individual takes a plurality of displacement steps within the structure) in such a way that the real object and the structure cooperating to form a seamless and integrated scene.

The Examiner also does not state in the Office Action that Kadowaki teaches or suggests limitation 1) set forth above. The Examiner correctly pointed out that Kadowaki discloses an image information displaying system where an object is placed behind a hologram screen. See Office Action, page 8, lines 1-2 (“*Kadowaki et al. discloses an image information displaying system where an object is placed behind a hologram screen.*”) However, this is not claimed in Claim 1 (or any other

claims of the present application), and therefore is not relevant to any limitations of claim 1.

Regarding limitation 2) above, Kadowaki does not teach or suggest anywhere any sensor that senses any interaction between an individual, and the scene (i.e. a scene which is seamless and integrated, and formed by cooperation of a structure and at least one real 3D object positioned within the structure – cf. previous limitations of claim 1).

The Examiner also does not state anywhere in the Office Action that Kadowaki teaches or suggests such a sensor.

Regarding limitation 3) above, nowhere in Kadowaki is there any teaching or suggestion of any delivering of images whose contents are a function of the interaction (sensed by the sensor recited in limitation 2 above) between the individual and the scene.

The Examiner also does not state anywhere in the Office Action that Kadowaki teaches or suggests a processing system that is configured to deliver a sequence of images to the display, the content of which are a function of the interaction between the individual and the scene sensed by the sensor.

For these reasons, Kadowaki does not teach or suggest any of the limitations 1), 2) , and 3) of claim 1 above.

In sum, Applicant submits that because Ritchey fails to teach or suggest all of the elements 1) – 3) above, and Kadowaki also fails to teach or suggest all of the elements 1) – 3) above, the proposed combination of Ritchey and Kadowaki fails to teach or suggest all of the elements 1) – 3) above.

B. There is no Suggestion, Teaching, or Motivation to Combine the documents (Ritchey and Kadowaki) on which the Examiner's Rejection is Based

It is well known that the cited documents themselves must suggest the desirability of making the proposed combination, in order for a *prima facie* case of obviousness to be established. MPEP §§ 2141 – 2142. In other words, the teaching or suggestion to make the claimed combination (as well as the reasonable expectation of success) must both **be found in the prior art** itself, and not based on applicant's disclosure. MPEP 2142. Also, "[T]he evidence of record must identify an objective source of the motivation to combine A with B in the manner proposed." In Re San Su Lee, 277 F.3d 1338 (CAFC 2002).

See also MPEP 2143.01: The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Applicant respectfully submits that the record does not establish the requisite motivation for combining Ritchey with Kadowaki.

Nowhere in either Ritchey or Kadowaki is there any suggestion of the desirability of combining a panoramic display system with an object placed behind a hologram screen. (Such a combination of would not result in the invention claimed in claim 1, anyhow.)

Because nowhere in Ritchey or Kadowaki is there any suggestion of the desirability of making the proposed combination, Applicant submits that the Examiner has failed to meet his burden of providing a suggestion of the desirability of making the proposed combination. (See MPEP 2142 and In Re San Su Lee, 277

F.3d at 1338: "*The initial burden is on the Examiner to provide some suggestion of the desirability of doing what the inventor has done.*")

In sum, because the combination of Ritchey and Kadowaki fails to teach or suggest all the limitations of amended independent claim, and because nowhere in Ritchey and Kadowaki can be found any motivation to combine the documents in the manner suggested by the Examiner, Applicant submits that amended independent claim 1 is not obvious under 35 U.S.C. § 103 over Ritchey in view of Kadowaki.

Claims 2-20, 29

It is well known that "[i]f an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." MPEP 2143.03; In re Fine, 837 F.2d 1071, 2 USPQ2d 1596 (Fed. Cir. 1988).

Claims 2-20 and 29 all depend on claim 1, and therefore include all the limitations of claim 1. For all the reasons discussed above, amended independent claim 1 is nonobvious under 35 U.S.C. 103 over Ritchey in view of Kadowaki. Accordingly, it follows that claims 2-20 and 29 (all depending from claim 1) are also nonobvious under 35 U.S.C. §103.

Claim 34

Claim 34 has been canceled, and therefore the Examiner's rejection of claim 34 is now moot.

6. Rejection of Claims 21-28 under 35 U.S.C. 103 (a)

Claims 21-28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ritchey in view of Kadowaki, and further in view of U.S. Pat. No. 5,086,385 to Launey et al.

Applicant respectfully traverses, and submits that neither Ritchey nor Kadowaki nor Launey, alone or in combination, teaches or suggests the subject matter recited in claims 21-28.

Claims 21-28 all depend on claim 1, and therefore include all the limitations of claim 1.

Applicant submits that the combination of these references (Ritchey, Kadowaki, and Launey) fails to teach, mention, or suggest at least the following limitations of claim 1:

- 1) *"at least one real, three-dimensional object positioned within the structure, the real object and the structure cooperating to form a seamless and integrated scene;"*
- 2) *"at least one sensor configured to sense an interaction between the individual and the scene [formed by cooperation of the real object and the structure] while the individual is in the scene"*
- 3) *"a processing system . . . configured to deliver a sequence of images to the display, the content of which are a function of the interaction between the individual and the scene sensed by the sensor."*

For all the reasons discussed above (in section C-3), the combination of Ritchey and Kadowaki fails to teach or suggest limitations 1)- 3) above of claim 1. Launey does not correct this deficiency, because Launey does not teach any of the features set forth in the above limitations 1) – 3).

Launey is directed to a home automation system, and has nothing to do with the distributed interactive environment claimed in claim 1. The Examiner also does not state anywhere in the Office Action that Launey teaches or suggest any of the above limitations 1) – 3) above of claim 1. Rather, the Examiner states that Launey discloses a home automation controller. There is no need to address this point, since a home automation controller is not recited in claim 1.

Accordingly, the combination of Ritchey, Kadowaki, and Launey fails to teach or suggest at least limitations 1), 2), and 3) above of claim 1.

Applicant: Pair et al.
U.S. Serial No. 10/647,932

For all of the reasons discusses above, claim 1 is nonobvious under 35 U.S.C. 103 over Ritchey in view of Kadowaki and further in view of Launey. Claims 21-28 all depend on claim 1, and therefore include all the limitations of claim 1. Accordingly, it follows that claims 21-28 are also not obvious under 35 U.S.C. §103 over Ritchey in view of Kadowaki and further in view of Launey.

7. Conclusion

On the basis of the foregoing amendments, Applicant respectfully submits that all of the pending claims are in condition for allowance. An early and favorable action is therefore earnestly solicited.

Respectfully submitted,
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D. AMENDMENT TO DRAWINGS

Two sheets of replacement drawings are attached, sheets 1 and 3. These sheets include changes to Fig. 1, and Fig. 4, respectively.

The first attached sheet of replacement drawings is identified in the top margin as "Replacement Drawing," and includes changes to Fig. 1. This sheet replaces the original sheet that included Fig. 1.

The second attached sheet of replacement drawings is also identified in the top margin as "Replacement Drawing," and includes changes to Fig. 4. This sheet replaces the original sheet including Fig. 4.